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RELATIONSHIP OF IGNEOUS ACTIVITY TO MINERAL DEPOSITS IN ARKANSAS

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ABSTRACT

Igneous rock is exposed on less than 0.05% of the surface area of Arkansas. This, however, is no measure of the importance of igneous activity to the origin of ore deposits in the state. The alkalic to ultrabasic intrusives of the Ouachita Mountain areas can be attributed as the source of the bauxite in central Arkansas, the barite near Magnet Cove and the diamond-bearing volcanic neck near Murfreesboro in southwestern Arkansas. These bodies, of probable mid-Cretaceous age, characteristically have a relatively high content of iron, titanium, columbium and vanadium, especially in the Magnet Cove region. Deeper bodies of similar character have been encountered in holes drilled in southeastern Arkansas.

Certain nickel-bearing serpentine and talc bodies of central Arkansas have been described as being derived from igneous bodies of Paleozoic age. Granite and rhyolite of probable Precambrian age have been encountered by deep drilling in northwestern Arkansas, and more recently reported at depth in west-central Arkansas near Fort Smith.

Since the Mesozoic and Paleozoic igneous activity of the state is closely connected to or immediately responsible for much of the known occurrence of metallic minerals in Arkansas, it is logical to examine this background in looking for new mineral deposits.